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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 31786-2015

**Tobacco and tobacco products -- Non-destructive
determination of strips density variation ratio in case -- Ionizing
radiation method**

烟草及烟草制品 箱内片烟密度偏差率的无损检测 电离辐射法

(English Translation)

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard uses the translation method identical with ISO 12030:2010 Non-destructive testing "of tobacco and tobacco products inside the chip smoke density variation rate Ionizing Radiation Law "(in English). This standard and ISO 12030:2010 as compared, an increase in the introduction of the standard description of the facts relating to patent Described in Appendix A and Appendix B order of appearance made editorial adjustments.

Correspondence between the consistency of the standards of international documents and normative references of the following documents.

--- GB/T 23357-2009 Tobacco and tobacco products - Determination of moisture Karl

Fischer method (ISO 6488:2004, MOD);

--- YC/T 345-2010 Tobacco and tobacco products Determination of moisture content by gas chromatography (ISO 16632:2003, MOD).

This standard was proposed by the State Tobacco Monopoly Bureau.

This standard by the National Standardization Technical Committee on Tobacco smoke Technical Committee (SAC/TC144/SC3) centralized.

This standard was drafted. China Tobacco Standardization Research Center, China Tobacco Corporation, Zhengzhou Tobacco Research Institute, China Tobacco Machinery Group Limited liability company, China Tobacco Corporation, Tianchang International Tobacco Limited, Qinhuangdao Tobacco Machinery Co., Ltd., Beijing Bangrui Da CONTROL Equipment Co., Ltd., China National Tobacco Corporation, Guizhou, Guangdong Tobacco Industry Co., Ltd., Hubei tobacco industry limited liability the company, Hongta Tobacco (Group) Co., Ltd.

0.1 Background

Box sheet smoke density deviation ratio (DVR) is one of the important factors affecting the sheet tobacco Aging effect and silk quality. If the density deviation rate over Large sheet tobacco Aging process in oil-prone, caking even carbonized, and in the difficult process of silk loose; density deviation rate can also lead to excessive cigarette Taste and quality degradation, it is necessary to detect front silk sheet density deviation rate inside the smoke.

Previously used "9.00 Law" (see reference [1]) detected smoke density deviation inside the chip rate, but the method for destroying smoke box test, the detection time Long and only suitable for off-line testing. In contrast, non-destructive testing method not only does not destroy the measured smoke box, quick and easy, but also applies to online testing and off-line testing.

Ionizing radiation method has been widely used in other fields (IEC 60692:1999) (see Ref. [2,3]), the International Electrotechnical Commission (IEC) has developed X- ray detection equipment safety standards (IEC 60405:2003) (see reference [4]). Penetrating X- ray films after the smoke box Intensity of the test substance (ie, inside the sheet tobacco) is directly related to the density of ionizing radiation law applies to smoke inside the sheet density line detection and error rate Off-line testing, non-destructive, rapid, secure and low cost. X- ray detection equipment used in this standard in line with relevant international standards, meet Safety requirements. This method is suitable for the detection of smoke density inside the sheet.

Smoke detection chamber slice density deviation rate of many other detection systems have the same precision can also be used.

0.2 Fact Sheets related patents

The issuing authority of the document drew attention to the declaration in line with this document, 5.1 and Chapter 6 may be involved with the X- ray detection equipment and testing the method of use of relevant patents.

The issuing authority for patent document authenticity, validity and scope without any position.

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Please note that in addition to the above patents, some of the contents of this document may still involve patents. The issuing authority of this document does not undertake to recognize these special Lee responsibility.

Tobacco and tobacco products inside the chip smoke density Deviation in non-destructive testing method ionizing radiation

1 Scope

This standard specifies the chip inside the smoke density deviation ratio (DVR) detection method.

This standard applies to the detection chamber slice smoke density variation rate.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

ISO 6488 Tobacco and tobacco products Determination of water content Karl Fischer method (Tobaccoandtobaccoproducts-Determinationofwatercontent-KarlFischermethod)

ISO 16632 Tobacco and tobacco products - Determination of moisture content by gas chromatography (Tobaccoandtobaccoproducts-Determinationofwatercontent-Gas-chromatographicmethod)

3 Terms and Definitions

The following terms and definitions apply to this document.

NDT non-destructivedetermination it does not destroy the test object is detected.

Density deviation rate densityvariationratio; DVR XDVR the relative standard deviation of density inside the sheet tobacco.

Principle 4

Attenuation occurs when penetrating inside the sheet tobacco X- ray attenuation amount depending on the density of the test sheet tobacco, density and X- ray intensity measured slice smoke Relationship see equation (1). Test principle is shown in Figure 1.

$\rho =$

U_{md}

I_{0B}

Where.

--- The density ρ of sheet tobacco, in kilograms per cubic meter (kg/m³);